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RESEARCH ARTICLE

New records of Geometridae and Noctuidae (Insecta: Lepidoptera) from Omsk and Novosibirsk Regions of Russia

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Abstract

Nine species of Lepidoptera from the territory of Omsk and Novosibirsk Regions are reported. Four species are new to Omsk Region, among them, *Panchrysia ornata* (Bremer, 1864), *Sympistis campicola* Lederer, 1853, *Pseudohadena argyllostigma* (Varga & Ronkay, 1991), *Orthosia cerasi* (Fabricius, 1775). Six species are new to Novosibirsk region, among them *Eupithecia carpophillata* Staudinger, 1897, *Idaea nitidata* (Herrich-Schäffer, 1861), *Sympistis campicola* Lederer, 1853, *Sidemia spilogramma* (Rambur, 1871), *Polia malchani* (Draudt, 1934), *Sideridis lampra* Schawerda, 1913.

Keywords

Russia, West Siberia, Omsk Region, Novosibirsk Region, Lepidoptera, Heterocera, Noctuidae, Geometridae, biodiversity

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Introduction

The present paper complements fauna of Macrolepidoptera of Omsk and Novosibirsk Regions. 987 species of Macrolepidoptera were recorded from Omsk Region based on published materials in Catalogue of Lepidoptera of Omsk Region (Knyazev 2020) and some additions (Knyazev and Ponomaryov 2020; Knyazev and Mironov 2021). During the 2021 field season, we collected extensive material, including species that were not previously recorded in Omsk and Novosibirsk regions. Based on these data, we present a list of new finds below.

Materials and methods

All material processed within the framework of this article was collected on the territory of the Omsk and Novosibirsk regions in 2021 by S.A. Knyazev, V.V. Ivonin, S.M. Saikina. Specimens were collected by using mercury lamps 250W. All specimens deposited in collections of Svyatoslav Knyazev (SKO, Omsk, Russia) and Vadim Ivonin (VIN, Novosibirsk, Russia). A list of species made in accordance with the system of the Catalog of Lepidoptera of Russia (Sinev 2019).

Geographical coordinates of the collecting sites are below:

Omsk Region

Agat (Fig. 1) – Nizhneomsky district, 5 km of Pustynnoye vill., Agat ravine, 55°59'8.90"N, 74°42'15.66"E;

Buzan – Russko-Polyansky district, 2 km SE of Buzan vill., 53°54'40"N, 73°57'31"E;

Elita – Omsk district, eastern suburbs of Omsk City, Elita Gardens, 55°1'57.63"N, 73°32'52.09"E;

Khlebodarovka (Fig. 2) – Russko-Polyansky district, 2,5 km S of Khlebodarovka vill., lake Obalykol`, 53°44'59.24"N, 73°27'27.20"E;

Lezhanka (Fig. 3) – Gorkovsky district, 3 km N of Lezhanka vill., Gorsky ravine, 55°29'46.81"N, 73°27'46.00"E;

Rechnik – Omsk district, Rechnik Gardens, 55° 2'51.16"N, 73°33'59.92"E.

Novosibirsk Region

Berezovskiye Skaly – Maslyaninsky district, 6 km N of Berezovo vill., 54°33'07.58"N, 84°02'09.43"E;

Bugotakskiye Sopki – Toguchinsky district, hills near Gornyi and Semenovsky vill., southern slopes, 55°03'37.53"N, 83°52'15.11"E;

Polyanovo (Fig. 4) – Tshistoozernyi district, steppe near Polyanovo vill., 54°33'07.70"N, 75°52'40.01"E;

Romanovka – Tshistoozernyi district, Romanovka vill. vic., steppe near Betula grove, 54°37'21.57"N, 76°01'26.74"E;

Shipunikha – Iskitimsky district, 67 km rail station, left bank of the river Shipunikha, 54°31'25.45"N, 83°25'05.13"E;

Sokolinyi Kamen` – Maslyaninsky district, 2 km E of Berezovo vill., h=232 m a.s.l., 54°31'22.21"N, 84°01'50.18"E;

Zayachya Gora (Fig. 5) – the border of Novosibirsk and Kemerovo Regions, SE bank of Tanaev pond, 54°45'39.88"N, 85°01'05.98"E.

Results

Family Geometridae

***Eupithecia carpophillata* Staudinger, 1897**
(Fig. 6–1)

Material examined. Novosibirsk Region: 1♀, Unnamed ryam, 07.VII.2014; 10♂ 2♀, Bugotakskiye Sopki, 18.VIII.2018, 11.VII, 27.VII.2019; 1♂, Berezovskiye Skaly, 03.VII.2020, 1♂, Sokolinyi Kamen`, 22.VI.2020; 1♂, Zayachya Gora, 29.VII.2021, V.V. Ivonin (VIN).

Remark. The first record of the species to Novosibirsk Region. This species is distributed in Russia from Southern Urals to the Far East including Sakhalin (Sinev 2019); also it is known from Kazakhstan, Kyrgyzstan, and Mongolia (Beljaev 2016). On the West Siberian Plain *E. carpophillata* was recorded from Omsk Region (Knyazev 2020). The flight period is from the end of June to August.

Figure 1. Habitat of *Panchrysia ornata* and *Sympistis campicola*. Omsk Region, Nizhneomsky district, 5 km of Pustynnoye vill., Agat ravine, 1.VIII.2021, photo by S.A. Knyazev.

Figure 2. Habitat of *Pseudohadena argyllostigma*. Omsk Region, Russko-Polyansky district, 2,5 km S of Khlebodarovka vill., 5.VIII.2021, photo by S.A. Knyazev.

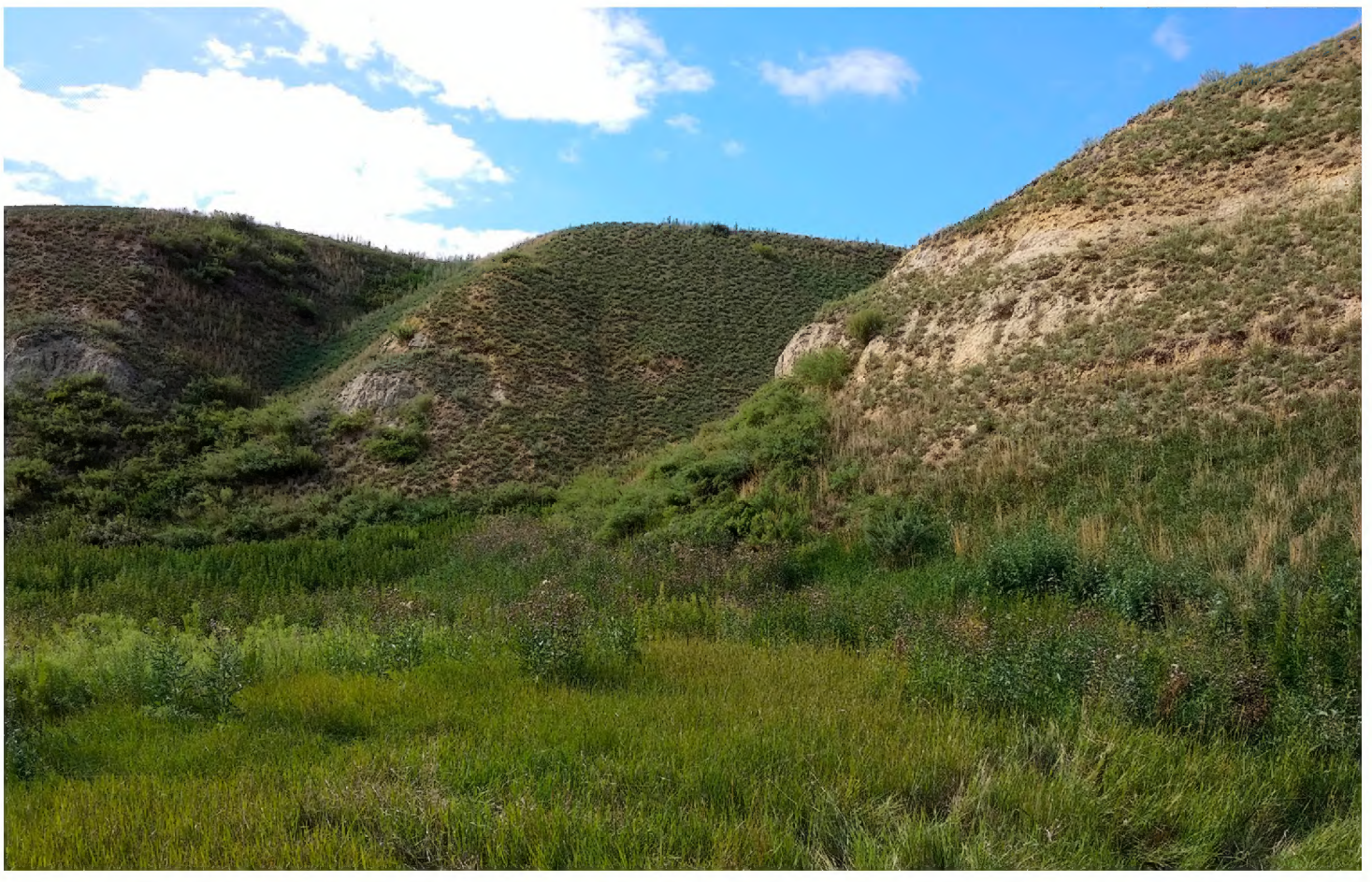

Figure 3. Habitat of *Panchrysia ornata*. Omsk Region, Gorkovsky district, 3 km N of Lezhanka vill., Gorsky ravine, 1.VIII.2021, photo by S.A. Knyazev.

Figure 4. Habitat of *Idaea nitidata*, *Sidemia spilogramma, Sideridis lampra*. Novosibirsk Region, Tshistoozernyi district, steppe near Polyanovo vill., 15.VIII.2021, photo by V.V. Ivonin.

Figure 5. Habitat of *Polia malchani*. Novosibirsk Region, the border of Novosibirsk and Kemerovo Regions, SE bank of Tanaev pond, 11.V.2020, photo by V.V. Ivonin.

***Idaea nitidata* (Herrich-Schäffer, 1861)**
(Fig. 6–2)

Material examined. Novosibirsk Region: 4♂1♀, Polyanovo, 8.VII.2021, V.V. Ivonin (VIN); 1♂, Romanovka, 9.VII.2021, V.V. Ivonin (VIN).

Remark. The first record of the species in Novosibirsk Region. Transpalaearctic species. In West Siberia it was previously known from Omsk Region (Knyazev 2020), Tomsk Region and Altai territory (Vasilenko 2006; 2007).

Family Noctuidae

***Panchrysia ornata* (Bremer, 1864)**
(Fig. 6–3)

Material examined. Omsk Region: 3♂, Lezhanka, at light, 1.VIII.2021, S.A. Knyazev (SKO); 3♂2♀, Agat, at light, 19-20.VIII.2021, S.A. Knyazev (SKO); **Novosibirsk Region:** 3♂, Berezovskiye Skaly, at light, 20.VII.2021 and 28.VII.2021; 2♂, Zayachya Gora, at light, 21.VII.2021 and 29.VII.2021, V.V. Ivonin (VIN).

Remark. The first record of the species in Omsk Region. This Siberian-Central Asian subboreal species distributed in Russia from South Ural across Siberia to the Far East. It is known from Kazakhstan, Mongolia, Korea and China (Kononenko 2016). In both localities in Omsk Region the specimens were found in same conditions – high right bank of the river Irtysh near the large ravines with the semi-desert steppe on the south facing slope and mixed forest (*Betula pendula*, *Populus tremula*) on the north facing slope. Flight period in Omsk Region is from middle of July to the end of August. In Novosibirsk Region this species was known by two males from Bugotak uplands (Knyazev et al. 2019).

***Sympistis campicola* Lederer, 1853**
(Fig. 6–4)

Material examined. Omsk Region: 3♂2♀, Agat, at light, 19-20.VIII.2021, S.A. Knyazev (SKO); **Novosibirsk Region:** 2♂1♀, Shipunikha, 2.VIII.2013, V.V. Ivonin (VIN); 1♂, Bugotakskiye Sopki, at light, 10.VIII.1983, V.V. Ivonin (VIN); 2♂, Sokolinyi Kamen`, 2.VIII.2019 and 13.VIII.2019, V.V. Ivonin (VIN); 2♂2♀, Berezovskiye Skaly, 15.VII.2020 and 20.VII.2021, V.V. Ivonin (VIN).

Remark. FThe first record of the species in Omsk and Novosibirsk Regions. It is widely distributed from the south of European part of Russia and South Ural, across mountain and steppe regions of Siberia to the Far East of Russia (Sinev 2019), already known from Kazakhstan, Kyrgyzstan, Mongolia, China, Korea, Japan (Kononenko 2016). Xerophilous mountain-steppe species. In Omsk Region specimens were collected on the high right bank of the river Irtysh near the large ravine with the steppe on the south facing slope and mixed forest (*Betula pendula*, *Populus*

tremula) on the north facing slope. It is noteworthy that in the southern steppe districts of Omsk Region this species was not previously found in collections, despite many years of research. This may indicate the significance of the rugged topography and elevations for this species in the conditions of the plain. The flight period in West Siberia from the middle of July to the end of august.

Sidemia spilogramma (Rambur, 1871)
(Fig. 6–5)

Material examined. Omsk Region: 1♂, Elita, at light, 25-26.VIII.2021, S.A. Knyazev, S.M. Saikina (SKO); 1♂, Khlebodarovka, at light, 4-5.IX.2021, S.A. Knyazev (SKO); 1♂, Rechnik, at light, 5.IX.2021, S.A. Knyazev, S.M. Saikina (SKO); **Novosibirsk Region:** 2♀, Polyanovo, at light, 15-16.VIII.2021, V.V. Ivonin (VIN).

Remark. The first record of the species in Novosibirsk Region. This xerophilous subboreal species is widely distributed from the south of European part of Russia and South Ural, across steppe regions of Siberia to the Far East of Russia (Sinev 2019), already known from South-East of Europe, Kazakhstan, Mongolia, China, Korea, Japan (Kononenko 2016). It was known from Altai territory (Zolotarenko and Dubatolov 2000), Omsk Region (Knyazev, 2020), Pavlodar Region in Kazaknstan (Titov et al. 2017). Records from Omsk Region are the northernmost in the distribution of the species in West Siberia.

***Pseudohadena argyllostigma* (Varga & L.Ronkay, 1991)**
(Fig. 6–6)

Material examined. Omsk Region: 1♀, Khlebodarovka, at light, 4-5.IX.2021, S.A. Knyazev (SKO).

Remark. The first record of the species in Omsk Region. The species was described from Novosibirsk Region (Varga and Ronkay 1991) and until now it was the only location of the species in Russia. It was already reported from NE Kazakhstan (Titov et al. 2017) and from Mongolia (Knyazev et al. 2020). New locality is the northernmost in the distribution of the species.

***Orthosia cerasi* (Fabricius, 1775)**
(Fig. 6–7)

Material examined. Omsk Region: 1♀, Buzan, at light, 5.V.2021, S.A. Knyazev, S.M. Saikina (SKO).

Remark. The first record of the species in Omsk Region. This transpalaearctic species was known from Novosibirsk Region and Altai territory on the West Siberian Plain (Zolotarenko and Dubatolov 2000). Single specimen was collected in early spring time in steppe zone on the south of Omsk Region.

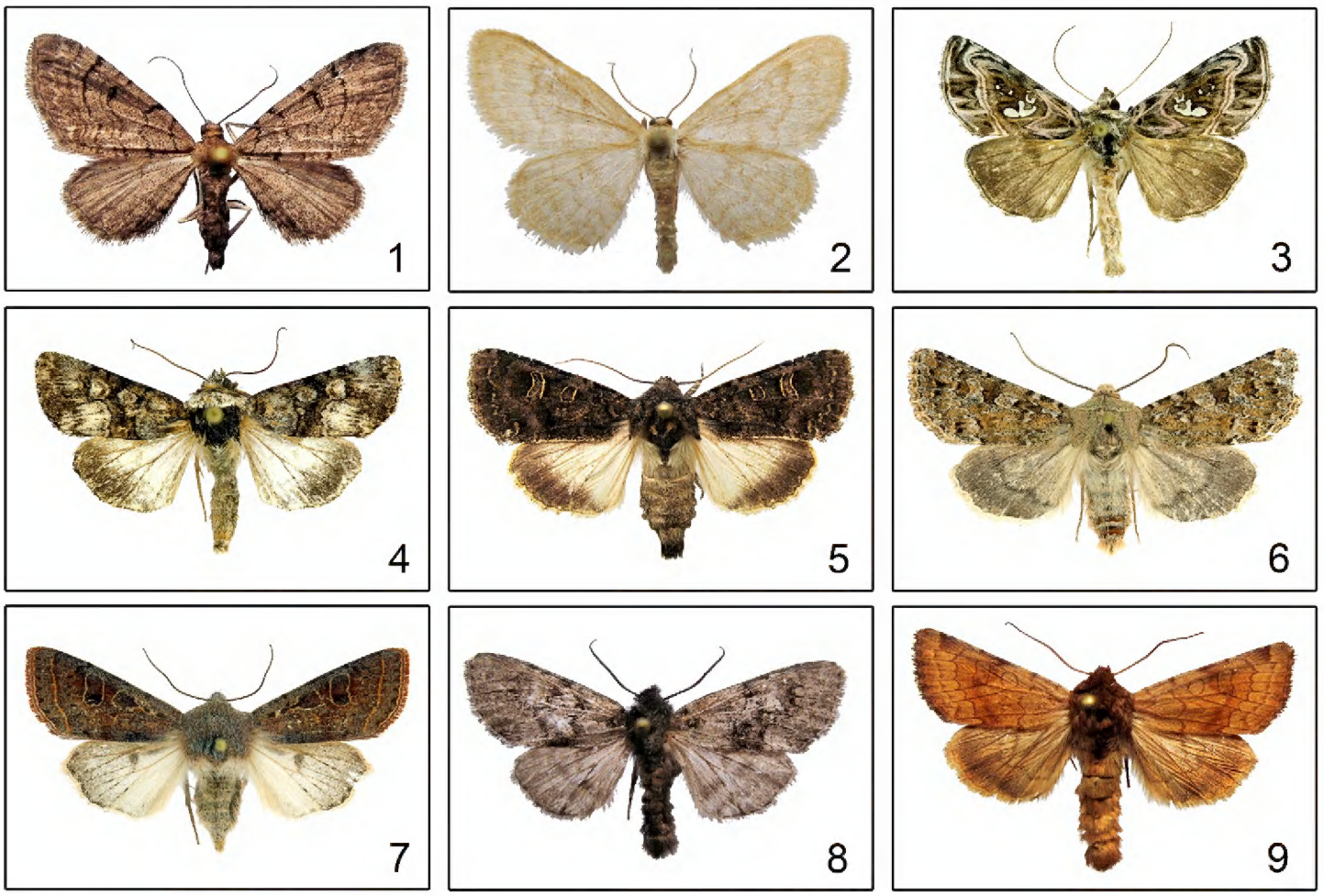

Figure 6. 1 – *Eupithecia carpophillata*, Bugotakskiye Sopki, 27.VII.2019 (VIN); **2** – *Idaea nitidata*, Polyanovo, 8.VII.2021 (VIN); **3** – *Panchrysia ornata*, Lezhanka, 1.VIII.2021 (SKO); **4** – *Sympistis campicola*, Agat, 19-20.VIII.2021 (SKO); **5** – *Sidemia spilogramma*, Polyanovo, 15.VIII.2021 (VIN); **6** – *Pseudohadena argyllostigma*, Khlebodarovka, 4-5.IX.2021 (SKO); **7** – *Orthosia cerasi*, Buzan, 5.V.2021 (SKO); **8** – *Polia malchani*, Zayachya Gora, 8.VI.2021 (VIN); **9** – *Sideridis lampra*, Polyanovo, 7.VI.2021 (VIN).

***Polia malchani* (Draudt, 1934)**
(Fig. 6–8)

Material examined. Novosibirsk Region: 1♂, Zayachya Gora, at light, 8.VI.2021, V.V. Ivonin (VIN).

Remark. The first record of the species in Novosibirsk Region. Inhabitant of mountain larch forests. Siberian species, distributed from Ural Mountains through Southern Siberia (Altai, Buryatia, Transbaikalia) to Russian Far East and Korea (Hacker et al. 2002; Sinev 2019). The flight period is in June.

***Sideridis lampra* Schawerda, 1913**
(Fig. 6–9)

Material examined. Novosibirsk Region: 4♂, Polyanovo, at light, 7.VII.2021, V.V. Ivonin (VIN).

Remark. The first record of the species in Novosibirsk Region. Previously it was reported from Omsk Region (Knyazev 2020) and from Pavlodar Region in NE

Kazakhstan (Titov et al. 2017). This species is distributed in steppe regions from South Europe to the Altai mountains (Hacker et al. 2002). The flight period in West Siberia is in June-July.

Conclusion

The total number of Macrolepidoptera in Omsk Region at this moment is 991 species. Noctuidae family of Omsk Region has been replenished with 4 species and now includes 364 species. The number of Noctuidae species in Novosibirsk Region now is 420, Geometridae – 282.

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References

Hacker H, Ronkay L, Hreblay M (2002) Hadeninae 1. – Noctuidae Europaeae, vol. 4, Sorø, 419 pp.

Knyazev SA (2020) Catalogue of Lepidoptera of Omsk Oblast (Russia). Macrolepidoptera. Families: Hepialidae, Brachodidae, Cossidae, Sesiidae, Limacodidae, Zygaenidae, Thyrididae, Drepanidae, Uraniidae, Geometridae, Lasiocampidae, Lemoniidae, Endromididae, Saturniidae, Sphingidae, Notodontidae, Lymantriidae, Arctiidae, Syntomidae, Erebidae, Nolidae, Noctuidae, Hesperiidae, Papilionidae, Pieridae, Lycaenidae, Nymphalidae, Satyridae. Acta Biologica Sibirica 6: 139–226. https://doi.org/10.3897/abs.6.e53005

Knyazev SA, Ivonin VV, Ustjuzhanin PYa, Vasilenko SV, Rogalyov VV (2019) New data on Lepidoptera of West Siberian Plain, Russia. Far Eastern Entomologist 386: 8–20. https://doi.org/10.25221/fee.386.2

Knyazev SA, Makhov IA, Matov AYu, Yakovlev RV (2020) Check-list of Macroheterocera (Insecta, Lepidoptera) collected in 2019 in Mongolia by Russian entomological expeditions. Ecologica Montenegrina 38: 186–204. http://dx.doi.org/10.37828/em.2020.38.27

Knyazev SA, Mironov VG (2021) Additions to the Catalogue of Lepidoptera of Omsk Region of Russia. Part 2: *Eupithecia* Curtis, 1825 (Lepidoptera: Geometridae). SHILAP Revista de lepidopterología, 49 (195): 563–568.

Knyazev SA, Ponomarev KB (2020) Additions to the Catalogue of Lepidoptera of Omsk Region of Russia. Part 1. Ecologica Montenegrina 36: 87-91. http://dx.doi.org/10.37828/em.2020.36.7

Kononenko VS (2016) Noctuoidea Sibiricae. Noctuidae: Cuculliinae – Noctuinae, part (Lepidoptera). Part 3. Proceedings of the Museum Witt Munich, Vol. 5. Munich-Vilnius, 500 pp.

Mironov VG (2003) Larentiinae II (Prizomini and Eupitheciini). In A. Hausmann (ed.): The Geometrid moths of Europe 4: 1–463.

Sinev SYu (Ed.) (2019) Catalogue of the Lepidoptera of Russia. Edition 2. Zoological Institute RAS, St. Petersburg, 448 pp.

Titov SV, Volynkin AV, Dubatolov VV, Černila M, Reznichenko SM, Bychkov VS (2017) Noctuoid moths (Lepidoptera: Erebidae, Nolidae, Noctuidae) of North-East Kazakhstan (Pavlodar Region). Ukrainian Journal of Ecology 7 (2): 142–164. http://dx.doi.org/10.15421/2017_32

Vasilenko SV (2006) Geometer-moths (Lepidoptera, Geometridae) of the forest-steppe zone of the West-Siberian Plain. Euroasian Entomological Journal 5 (3): 215–219. [In Russian]

Vasilenko SV (2007) Geometer-moths (Lepidoptera, Geometridae) of Tomsk Region. Proceedings of the Russian Entomological Society 78 (1): 19–31. [in Russian]

Varga Z, Ronkay L (1991) Taxonomic studies on the Palaearctic Noctuidae (Lepidoptera) I. New taxa from Asia. Acta Zoologica Hungarica 37 (3-4): 263–312.

Volynkin AV (2012) Noctuidae of the Russian Altai (Lepidoptera). Proceedings of the Tigirek State Natural Reserve 5: 1–239.

Zolotarenko GS, Dubatolov VV (2000) A check-list of Noctuidae (Lepidoptera) of the Russian Part of the West-Siberian Plain. Far Eastern Entomologist 94: 1–23.